Raymark Industries, Inc. Superfund Site

Stratford Health Department

Presentation Overview

- Introductions
- Commonly used terms/acronyms
- History of the site
- Types of waste and locations
- Health studies
- Updates on current status of the site and future work

Commonly Used Terms/Acronyms

- Community Advisory Group (CAG)
- Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 9601-9675. (CERCLA) a.k.a Superfund
- Institutional Controls (IC)
  - Environmental Land Use Restriction (ELUR)
- Operable Unit (OU)
- Parts per Million (PPM)
- Record of Decision (ROD)
- Soil Vapor Mitigation System (SVMS) or Sub-Slab Depressurization System (SSDS)
- Vapor Intrusion (VI)
- Volatile Organic Compounds (VOC)

What was Raymark?

Raymark Industries, Inc., also known as Raybestos, was a manufacturer of automotive brakes, clutch parts, and other friction components, primarily for the automotive industry. Raymark operated in Stratford from 1919 until 1989 when operations ceased.

The History of Raymark

1902-1989

1902

The A.H. Raymond Company was established. Beginning $1.01 in the red, it would become the catalyst for forming one of the great corporations of American industry, Raybestos-Manhattan, Inc. In a tiny shop in Bridgeport, Connecticut, the four-man operation manufactured brake lining, the Raymond brake, and clutch facings. To improve the performance and safety of automobile brakes, Raymond pioneered a non-charring asbestos and copper-wire brake lining, trade-named "Raybestos," which improved braking capacity.

Raybestos

1916

Sumner Simpson joined the company, which had become the Royal Equipment Company of Bridgeport. Simpson would provide visionary leadership for the next 40 years. By 1916 "Raybestos" had become so synonymous with brakes and clutch lining that the company was renamed the Raybestos Company with Simpson as its president. That year, sales rose to $1.34 million.

History of Raymark in Stratford

1919

Raybestos moves from Bridgeport to East Main Street in Stratford.

1929

Raybestos merges with Manhattan Rubber Co., forming the Raybestos-Manhattan Company.

1939

Raybestos-Manhattan consolidates all operations at the Stratford site.

1941

Safety was the keynote as the '40s began, and Raybestos initiated a nationally successful campaign that featured the Raybestos "Friendly Cop" promoting the message that security comes from safe brakes. Production of sintered-metal clutch parts began in 1941 for earth-moving equipment. After Pearl Harbor, automobile production came to a virtual standstill, but Raybestos forged ahead producing vital parts that were used in nearly every U.S. military vehicle, airplane and sea-going vessel.

Raybestos produced 90% of the brake linings for all U.S. heavy bombers made for WWII, as well as clutch plates for the two-speed planetary B-29 Supercharger. Every Raybestos division was honored

1946

for its contribution to the war effort. When automobile production started up again in 1946, Raybestos resumed development of automatic transmission parts.

Free soil fill offered and distributed throughout the 40s, 50s and 60s

Raymark had a series of lagoons and holding areas

Liquid waste was pumped into these lagoons…

…contaminating the nearby Ferry Creek

… and the groundwater

1975

Stratford requests assistance from CTDEP in evaluating several sites suspected of asbestos contamination and identifies 12 areas where it is found.

1980

Comprehensive Environmental Resource Compensation and Liability Act (CERCLA) a.k.a. Superfund enacted

1984

EPA becomes involved with the Raymark facility.

1988

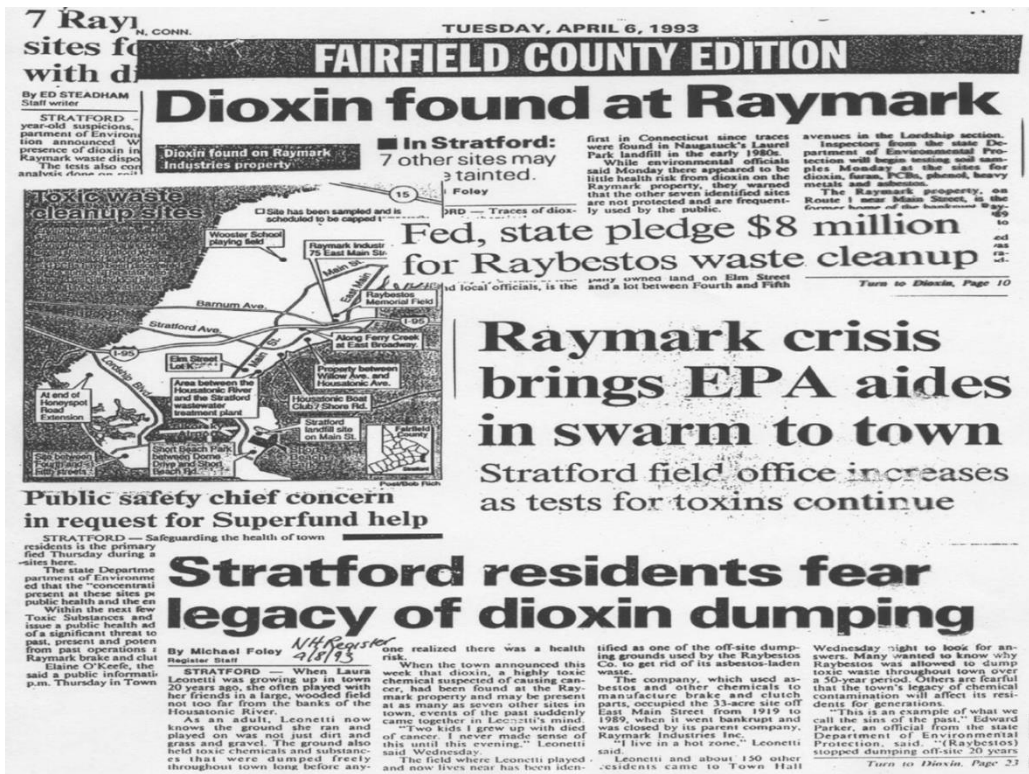
Stratford plant closing announced due to lawsuits related to asbestos litigation; EPA conducts preliminary assessment of 12 suspected asbestos sites.

1993

Stratford Health Department and Town Manager petition the Federal Agency for Toxic Substances and Disease Registry (ATSDR). ATSDR performs a health assessment and issues a Health Advisory for the Raymark Facility and locations within the Town where Raymark waste has been deposited.

1995

ATSDR releases a Public Health Assessment on Raymark. Raymark is listed on the EPA's National Priorities List, also known as the Superfund list.



TUESDAY, APRIL 6, 1993

FAIRFIELD COUNTY EDITION

Dioxin found at Raymark

Dioxin found on Raymark Industries property

■ In Stratford: 7 other sites may be tainted.

first in Connecticut since traces were found in Naugatuck's Laurel Park landfill in the early 1980s.

While environmental officials said Monday there appeared to be little health risk from dioxin on the Raymark property, they warned that the other seven identified sites are not protected and are frequently used by the public.

avenues in the Lordship section.

Inspectors from the state Department of Environmental Protection will begin testing soil samples Monday at the sites for dioxin, furan, PCBs, phenol, heavy metals and asbestos.

Turn to Dioxin, Page 10

Fed, state pledge $8 million for Raybestos waste cleanup

Raymark crisis brings EPA aides in swarm to town

Stratford field office increases as tests for toxins continue

Public safety chief concern in request for Superfund help

Stratford residents fear legacy of dioxin dumping

By Michael Foley
Register Staff

NH Register 4/8/93

STRATFORD — When Laura Leonetti was growing up in town 20 years ago, she often played with her friends in a large, wooded field not too far from the banks of the Housatonic River.

As an adult, Leonetti now knows the ground she ran and played on was not just dirt and grass and gravel. The ground also held toxic chemicals and substances that were dumped freely throughout town long before anyone realized there was a health risk.

When the town announced this week that dioxin, a highly toxic chemical suspected of causing cancer, had been found at the Raymark property and may be present at as many as seven other sites in town, events of the past suddenly came together in Leonetti's mind.

"Two kids I grew up with died of cancer. I never made sense of this until this evening," Leonetti said Wednesday.

The field where Leonetti played and now lives near has been identified as one of the off-site dumping grounds used by the Raybestos Co. to get rid of its asbestos-laden waste.

The company, which used asbestos and other chemicals to manufacture brake and clutch parts, occupied the 33-acre site off East Main Street from 1919 to 1989, when it went bankrupt and was closed by its parent company, Raymark Industries Inc.

"I live in a hot zone," Leonetti said.

Leonetti and about 150 other residents came to Town Hall Wednesday night to look for answers. Many wanted to know why Raybestos was allowed to dump toxic waste throughout town over a 50-year period. Others are fearful that the town's legacy of chemical contamination will affect its residents for generations.

"This is an example of what we call the sins of the past," Edward Parker, an official from the state Department of Environmental Protection, said. "(Raybestos) stopped dumping off-site 20 years

Turn to Dioxin, Page 23

1993-1997

EPA starts excavating Raymark waste from 46 residential properties and Wooster school, and excavated material is returned to the Raymark facility for storage

1996-1997

At the site of the former facility, buildings are demolished, over 100,000 cubic yards of waste are consolidated, and a 36-acre impermeable cap is placed over the site.

Contaminated Media of Concern

Soil

Raymark waste has three main components (fingerprint):

- **Lead** (more than 400 ppm [parts per million])
- **Chrysotile asbestos** (more than 1 percent)
- Either **Arochlor 1268** (a polychlorinated biphenyl or PCB, more than 1 ppm), or **copper** (more than 228 ppm).

Groundwater/Indoor Air

- Groundwater contamination migrated from the former Raymark facility toward the Housatonic River
- The contaminants of concern in the groundwater are **volatile organic compounds (VOCs)** and are able to impact indoor air
- Since buildings in this area are connected to public water, drinking contaminated groundwater is not a concern.

Soil:

OU1: Former facility

OU3: Upper Ferry Creek

OU4: Raybestos Memorial Ball Field

OU5: Shore Rd/ Housatonic Boat Club

OU6: Additional Fill Properties

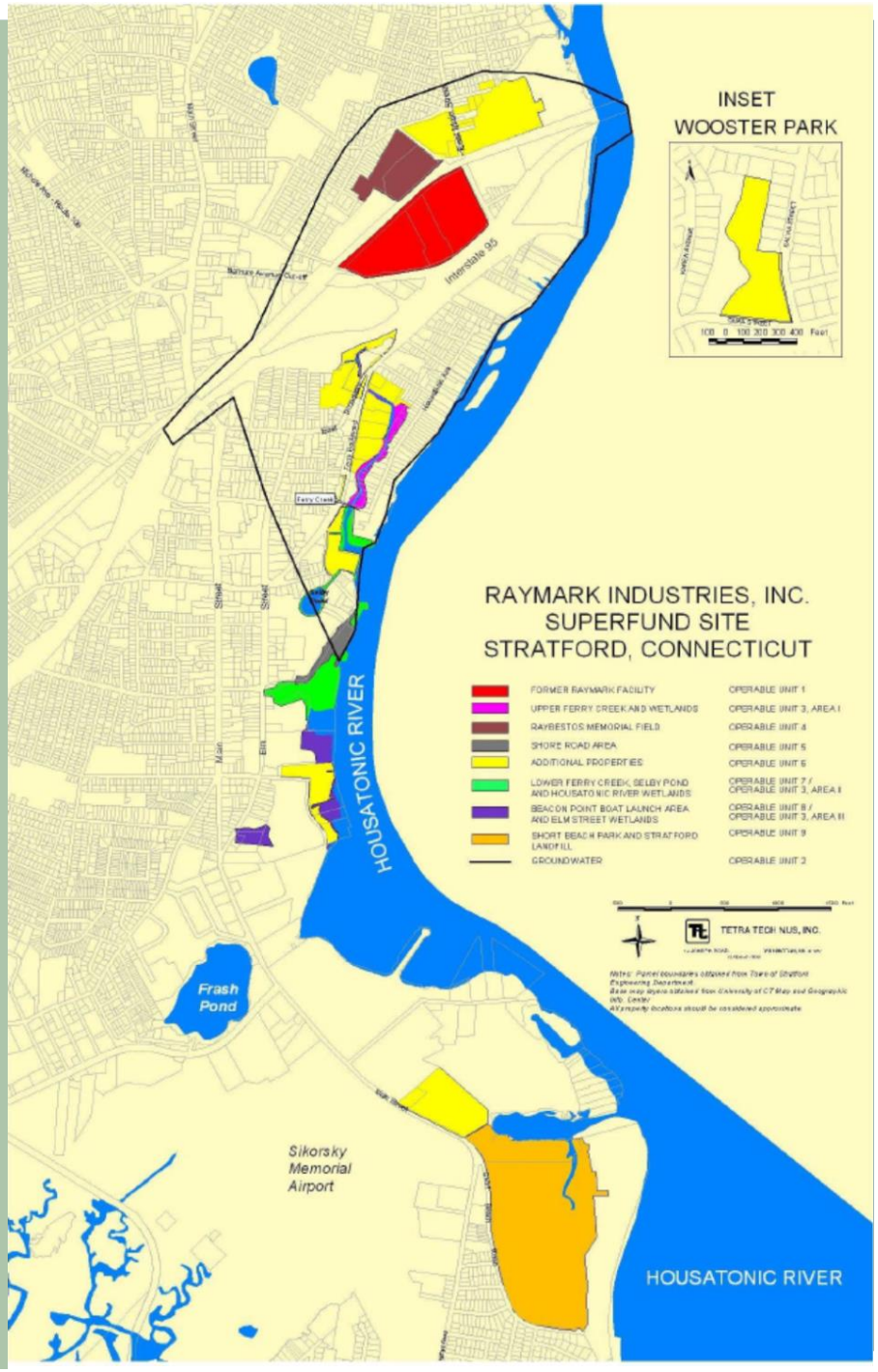
OU7: Lower Ferry Creek/Wetlands

OU8: Beacon Point Boat Launch

OU9: Short Beach Park/Landfill

Groundwater:

OU2: Groundwater Study Area



How were properties selected for soil testing?

Properties were tested for Raymark waste for various reasons, including:

- Location next to a property known or suspected of containing raymark waste
- A request by the current owner for testing after the discovery of suspicious material
- Aerial images showing disturbed land or evidence of fill
- Town's input
- Areas where the public frequented (schools, parks, etc)

Soil Contamination

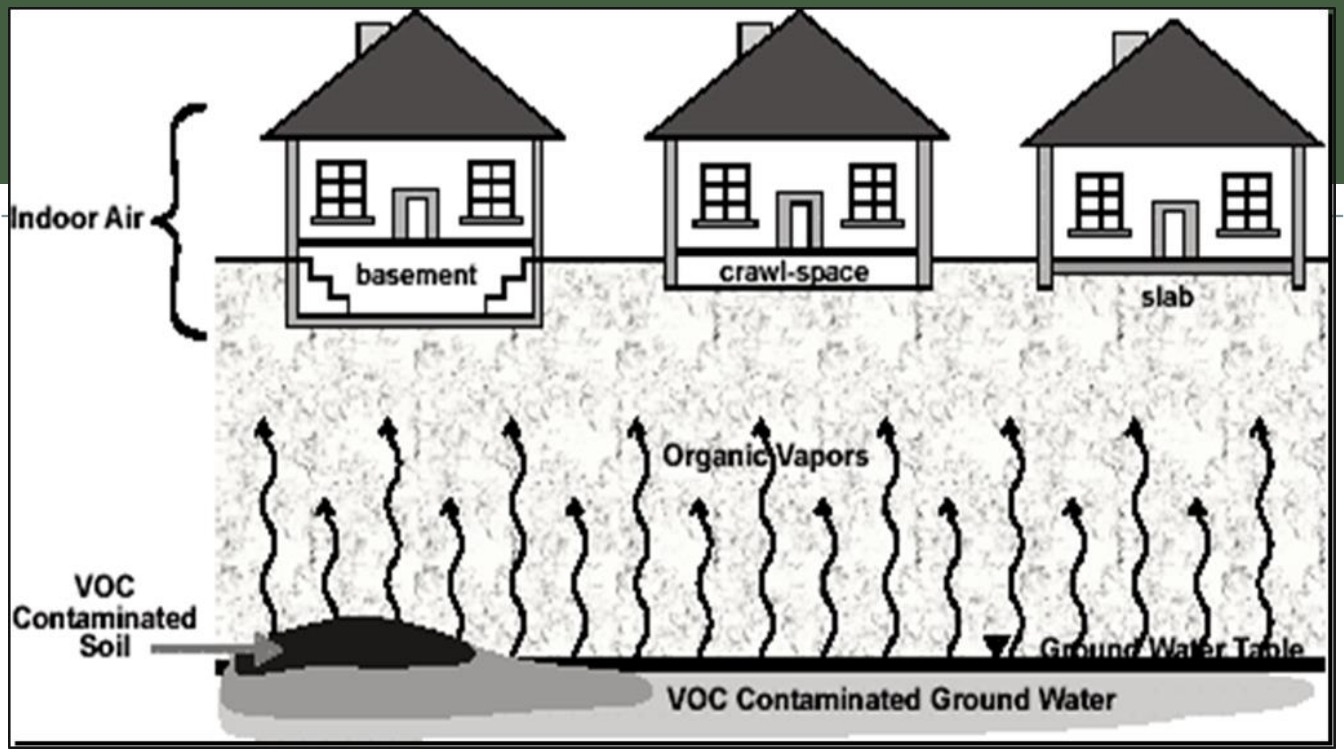
Three outcomes from residential sampling:

1. No Raymark waste identified (approximately 206 residential properties)
2. Raymark waste identified, removal action completed (approximately 46 residential properties)
3. Raymark waste identified, removal action completed with some waste left in place and digging restrictions (approximately 15 out of the 46 residential properties)

Non-Raymark Waste Properties

- Properties tested during the investigation of Raymark not found to have all the components of Raymark waste
- Soil samples containing elevated levels of lead, PCBs and/or asbestos (potentially from lead based paint or asbestos shingling)
- Not eligible for EPA cleanup because not linked to the Raymark site, referred to the Health Department for follow-up

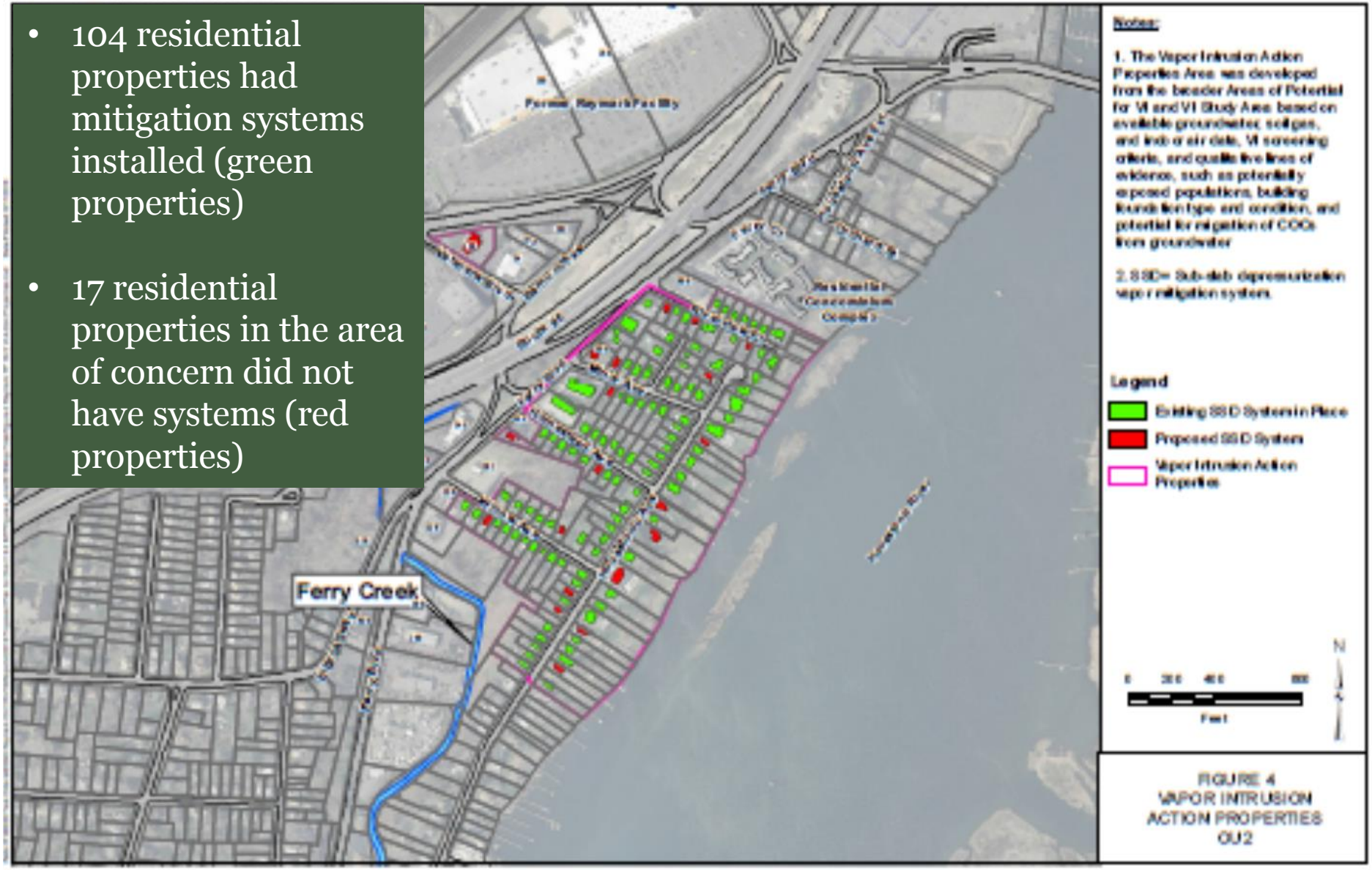
Groundwater Contamination & Vapor Intrusion



VOCs in groundwater have the potential to escape from groundwater as a gas (their natural state) and travel upwards through the soil into buildings located above through cracks in the slab and foundation. This process is known as vapor intrusion.

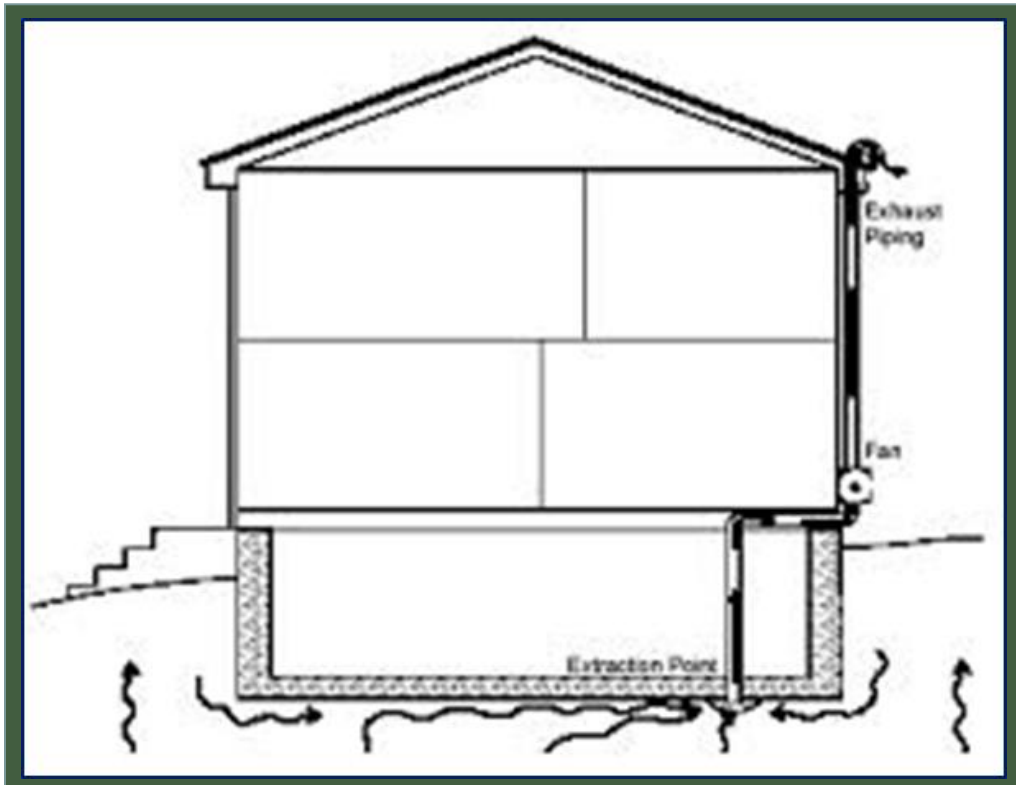
Soil Vapor Mitigation Systems

- 104 residential properties had mitigation systems installed (green properties)
- 17 residential properties in the area of concern did not have systems (red properties)

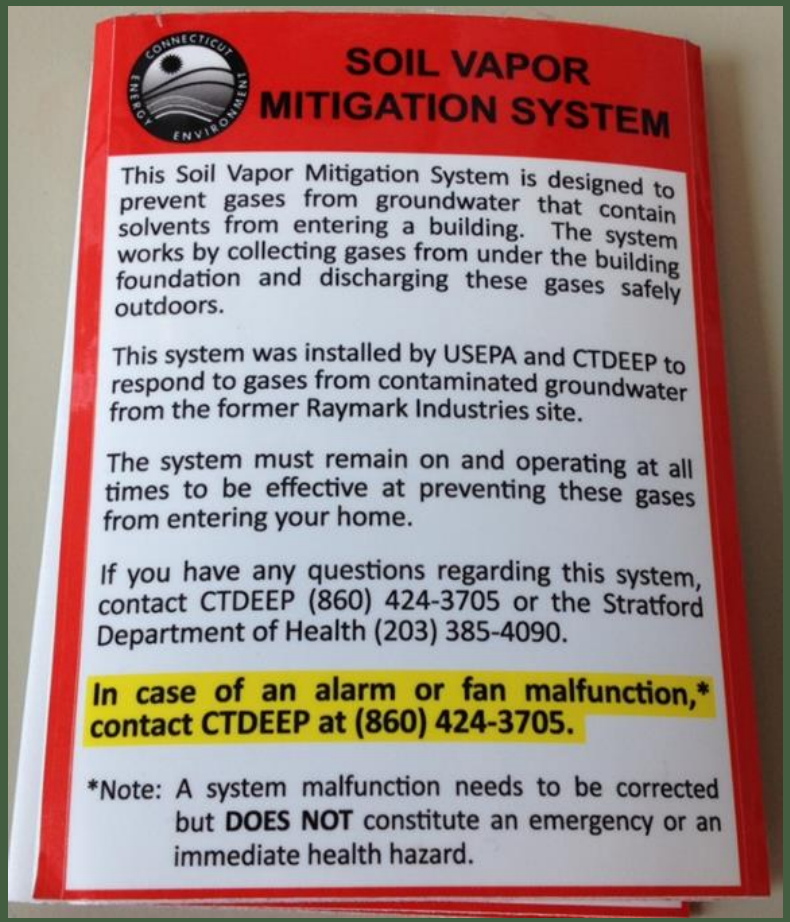


Additional SVMS Installations

- 2016 Record of Decision
  - → EPA and CTDEEP offered to install systems free of charge at properties in the area of concern that did not have systems



The system works by collecting gases from under the building foundation and discharging these gases safely outdoors. The system must remain on and operating at all times to be effective at preventing these gases from entering the building.



Town of Stratford
Groundwater and Vapor Intrusion Zones Ordinance

- The ordinance became effective August 9, 2017
- It was written to protect public health by:

1. Preventing the use of contaminated groundwater in the Groundwater Zone and by preventing any expansion of the Groundwater Zone caused by human activity.
2. Preventing soil gas potentially contaminated with VOCs from entering the breathable air of homes and commercial buildings located within the Vapor Intrusion Zone by ensuring that the Soil Vapor Mitigation Systems are in place and maintained.

Contaminants & Potential Health Effects

Lead
Asbestos
PCBs
TCE

Exposure occurs only when an individual comes in contact with a contaminant and it gets into the body:

- Inhalation
- Ingestion
- Dermal Contact

The dose, duration of exposure, route of exposure, and characteristics of the individual exposed determine whether poor health is likely to occur from exposure.

Health Studies

- 1993: Preliminary Cancer Study
- 1993: Blood Lead Testing
- 1998: Cancer & Proximity to Raymark waste
- 2001: Bladder Cancer & Proximity to Raymark waste
- 2003: Indoor Air Risk Assessment
- 2011: Follow-up Bladder Cancer

Completed:

OU1: Former facility

Remedial Action:

OU2: Groundwater

Design:

OU3: Upper Ferry Creek

OU4: Raybestos Memorial Ball Field

OU6: Additional Fill Properties

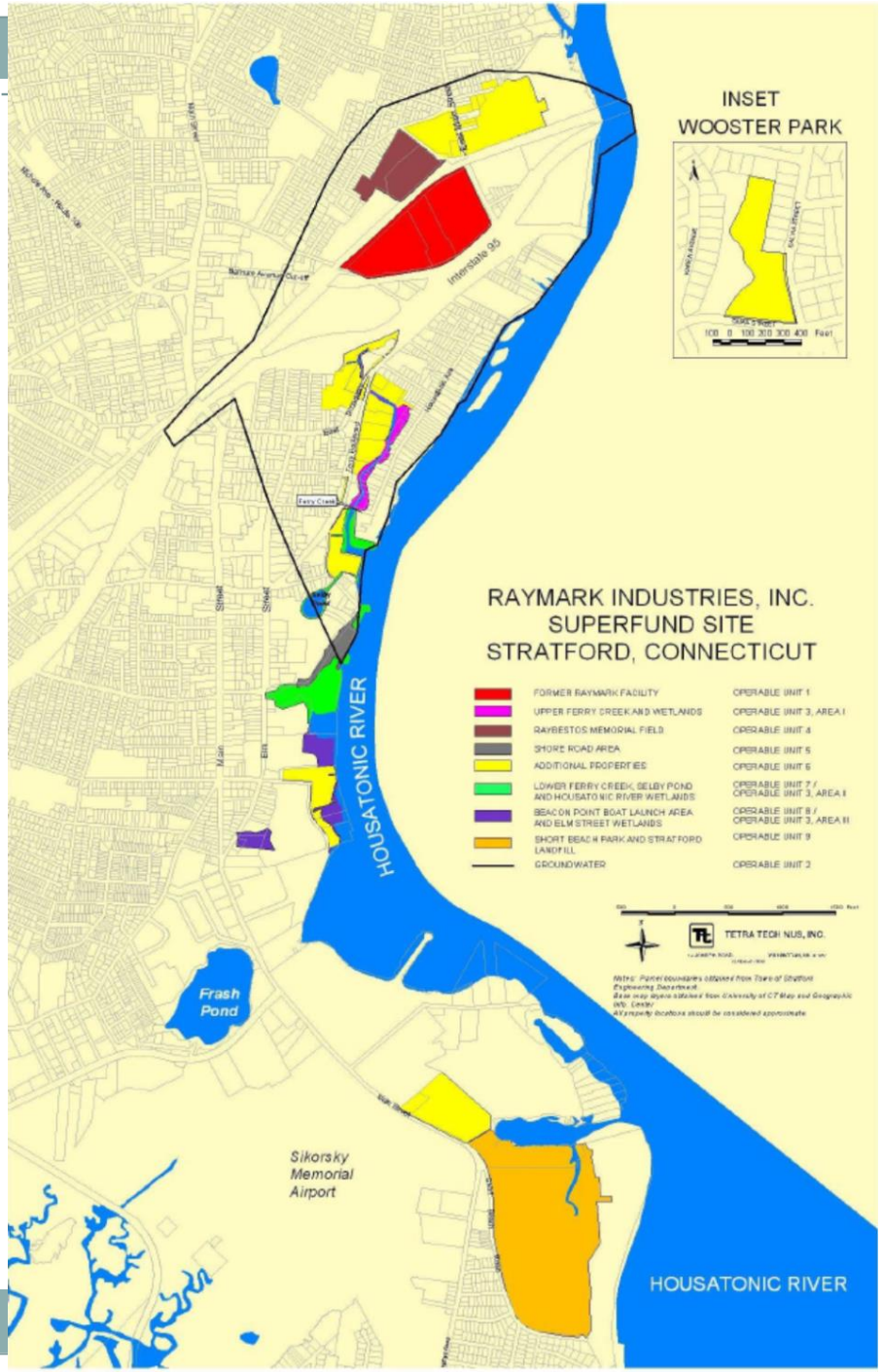
Investigation:

OU5: Shore Rd/ Housatonic Boat Club

OU7: Lower Ferry Creek/Wetlands

OU8: Beacon Point Boat Launch

OU9: Short Beach Park/Landfill



Ongoing and Future Cleanup

Recent Records of Decision to address remaining operable units were issued in July 2011 and September 2016.

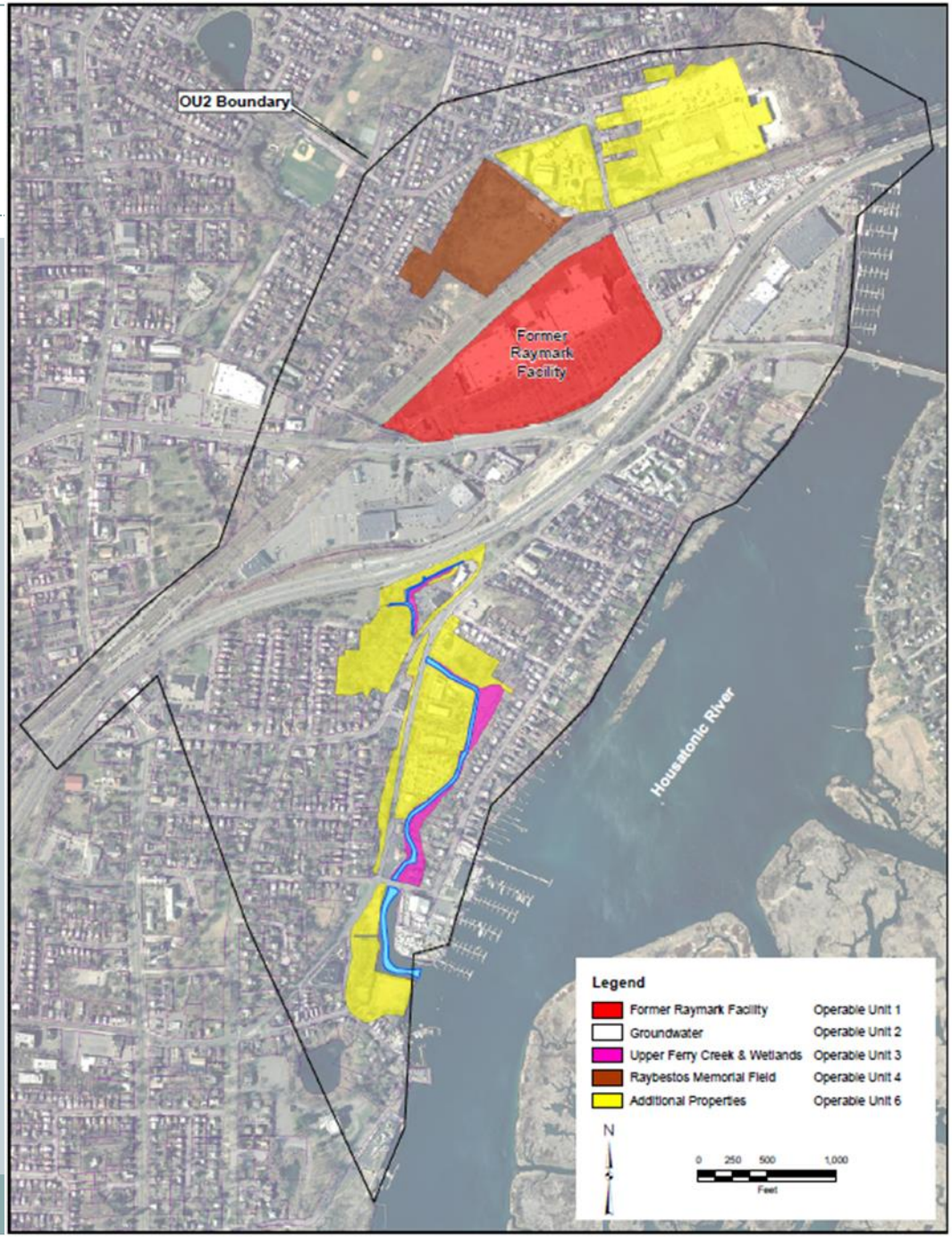
July 2011 Record of Decision

- Includes 4 OU6 properties
  - Capping of 576 and 600 East Broadway (Morgan Francis)
  - Excavation of Raymark Waste from 3rd Avenue (consolidate)
  - Institutional Controls on Beacon Point AOC2 (8'+ deep)

September 2016 Record of Decision

- Includes remedies for:
  - OU2(Groundwater)
  - OU3(Upper Ferry Creek)
  - OU4(Raybestos Ball Field)
  - OU6(Additional Properties)

View EPA's ROD at: https://semspub.epa.gov/work/01/592492.pdf



EPA and CTDEEP Updates

Operable Units

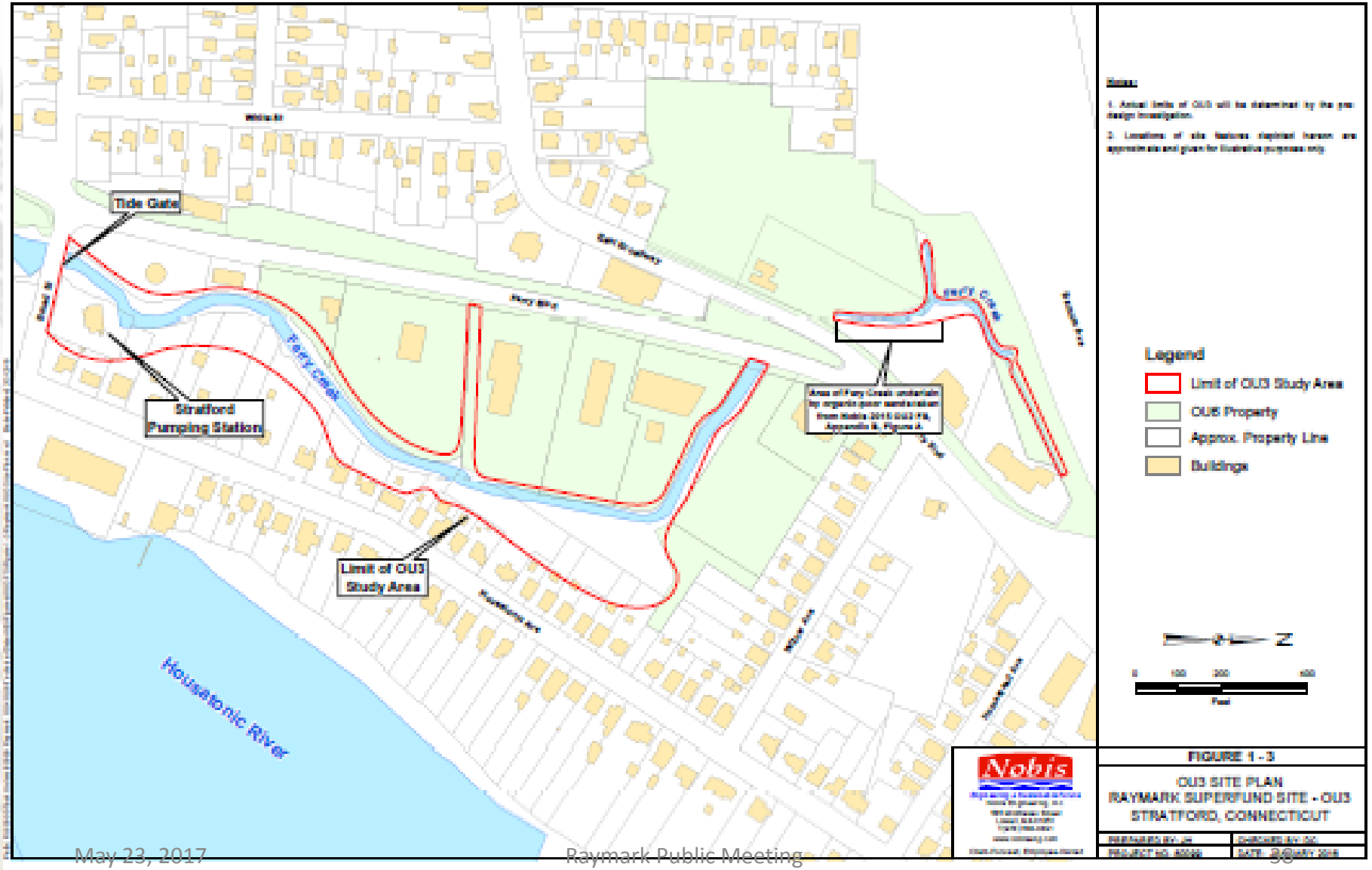
- **OU1: Former facility. Capped (complete)**
- **OU2: Groundwater/Vapor Intrusion (Remedial Action)**
- **OU3: Upper Ferry Creek (Remedial Design)**
- **OU4: Raybestos Memorial Ball Field (Remedial Design)**
- **OU6: Additional Fill Properties (Remedial Design)**
- **OU5: Shore Rd/Housatonic Boat Club (investigation)**
- **OU7: Lower Ferry Creek (investigation)**
- **OU8: Beacon Point Boat Launch (investigation)**
- **OU9: Short Beach Park/Landfill (investigation)**

September 2016 ROD

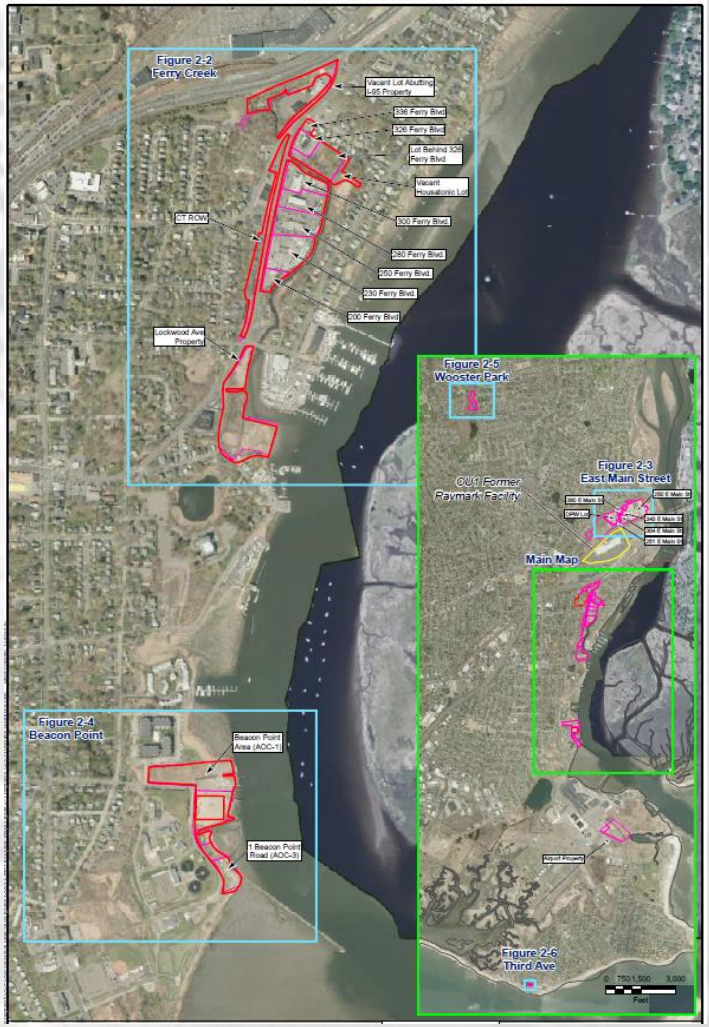
1. OU2 – Groundwater and vapor intrusion
2. OU3 – Upper Ferry Creek
3. OU4 – Former Raybestos Memorial Ball Field
4. OU6 – 22 Additional Properties

Vapor Intrusion Study Area (OU2)

Upper Ferry Creek Study Area (OU3)

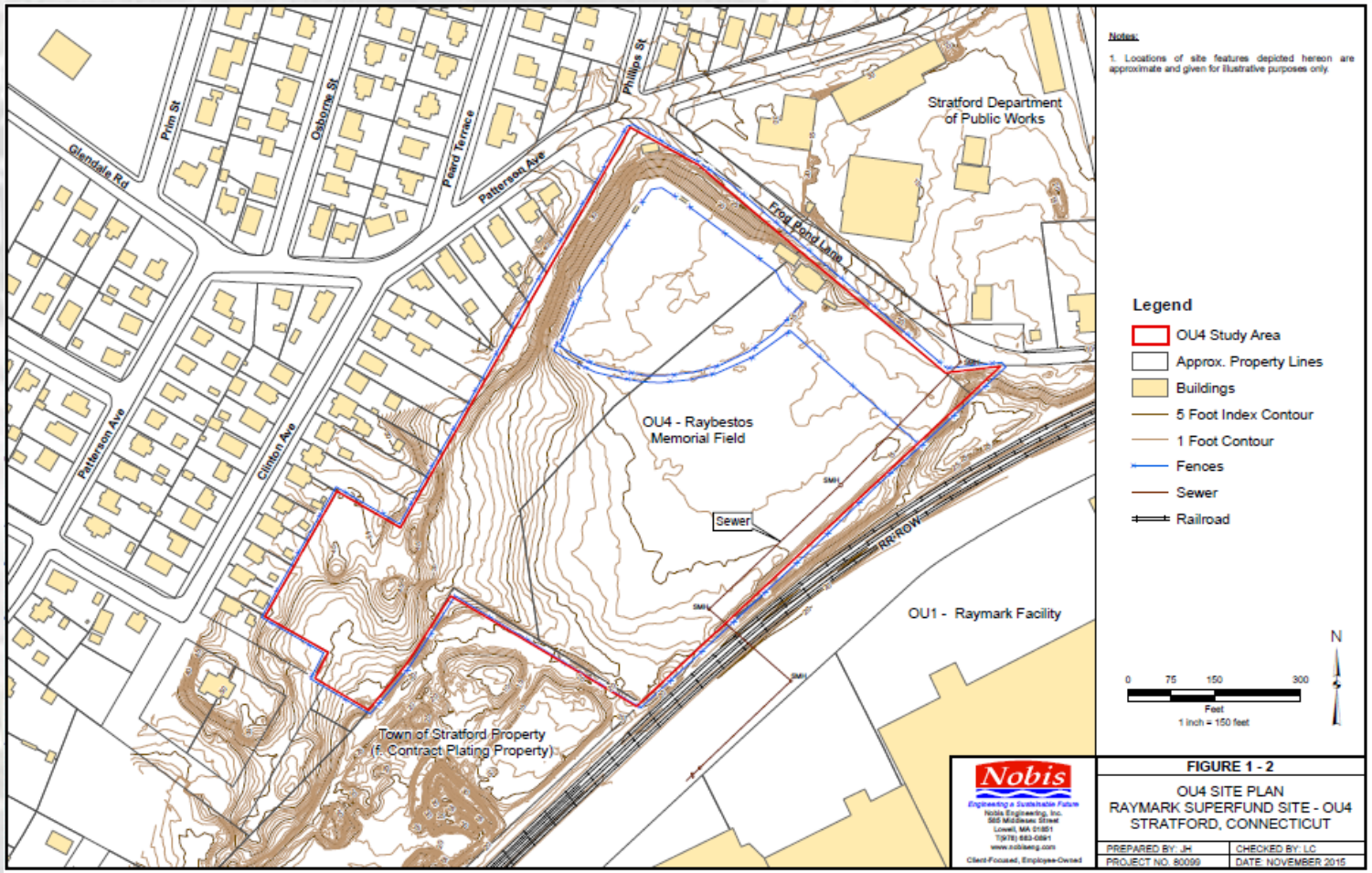


“Additional Properties” Study Area (OU6)

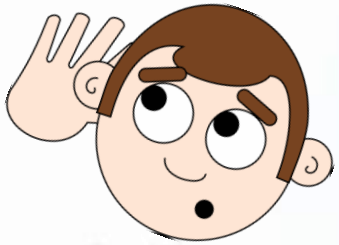


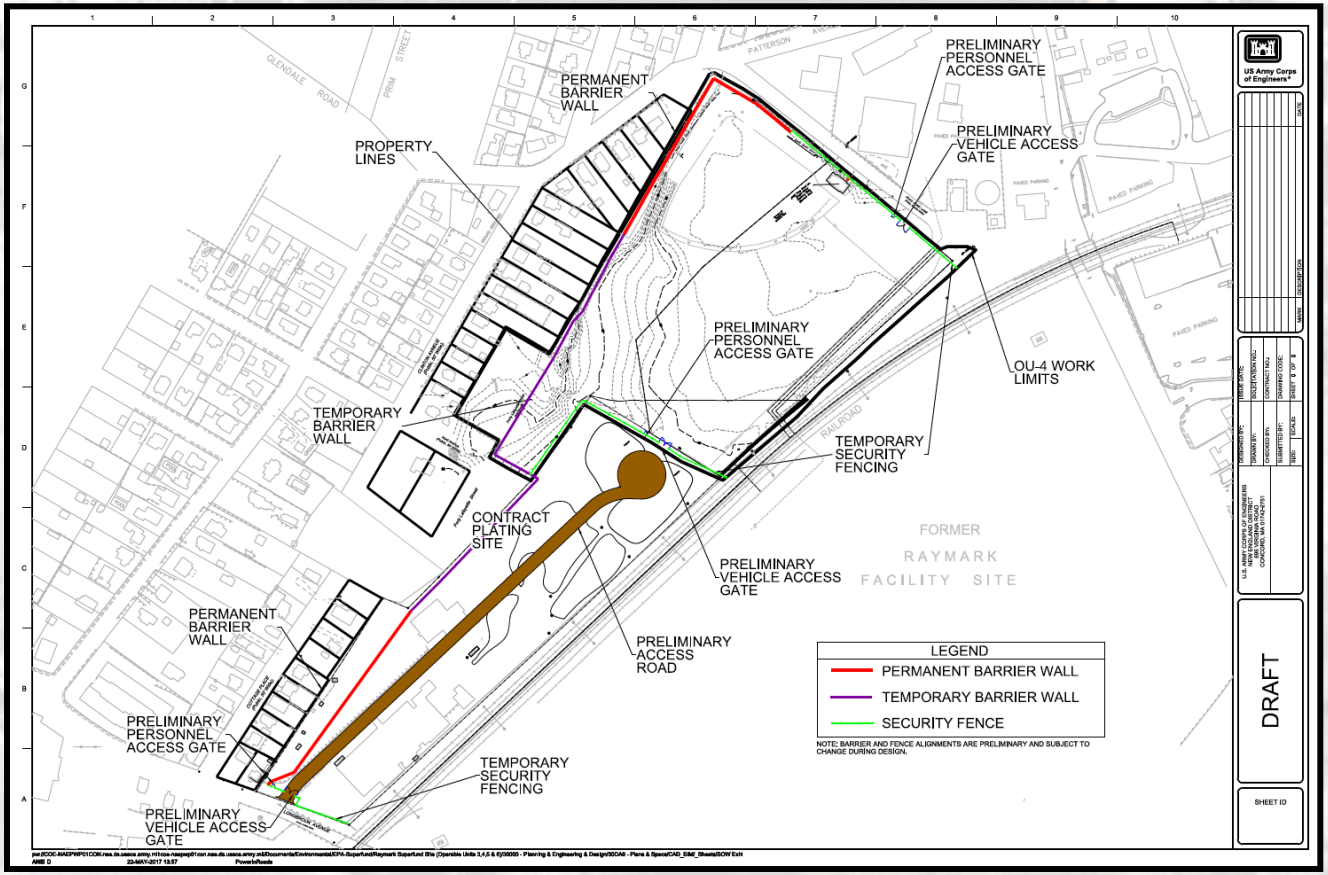
	OU6 PROPERTY LOCATION	PROPERTY TYPE
1	200 Ferry Boulevard	Active business
2	230 Ferry Boulevard	Active business
3	250 Ferry Boulevard	Active business
4	280 Ferry Boulevard	Active business
5	300 Ferry Boulevard	Active business
6/7	Lot Behind 326 Ferry Boulevard (and adjacent vacant lot)	Vacant/lightly vegetated
8	326 Ferry Boulevard	Active business
9	336 Ferry Boulevard	Active business
10	Lot Abutting I-95	Vacant/lightly vegetated
11	Connecticut Right-of-Way	Vacant/lightly vegetated
12	250 East Main Street	Active business
13	251 East Main Street	Active business
14	304 East Main Street	Active business
15	340 East Main Street	Active business
16	380 East Main Street	Active business
17	DPW Lot	Active municipal
18	Wooster Park	Recreational
19	Third Avenue Property	Residential
20	Lockwood Avenue	Vacant/wetlands
21	Beacon Point Area of Concern #1	Recreational
22	Beacon Point Area of Concern #3	Recreational

Raybestos Memorial Ballfield Study Area (OU4)



WE ARE LISTENING

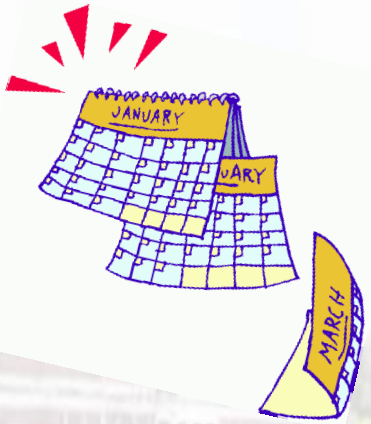




- Will be Safe
  - Air monitoring
  - Dust suppression
- Construct Barrier
- Save Trees
- Buffer
- Remove RW
- New Plantings

Ballfield Conceptual Redevelopment Plan

Schedule



- **2017**
  - 576/600 East Broadway. Design.
  - (OU2) Install vapor systems.
  - (OU3/OU4/OU6) Design.
- **2018**
  - 576/600 East Broadway. Construct cap and buildings.
  - (OU4) Construct barrier and access road.
  - (OU3/OU6) Begin excavations.
  - (OU4) Begin consolidation.
- **2019/2020**
  - (OU3/OU4/OU6) Continue excavation and consolidation.
- **2021**
  - (OU3/OU6) Complete excavation.
  - (OU4) Construct cap and storm water management system.


Judson Pl
Off the Hook Bar & Grill
Stratford Library
Main St
Elm St
Broad St
Broad St
Housatonic River
St James School
Academy Hill Park
Academy Hill Terrace
Outriggers Restaurant
Harvey Pl
Kings College Pl
Academy Hill Rd
Ferry Blvd
Lockwood Ave
Pickle Barrel
Stratford Ave
Browns Marina
Selby's Pond
Elm St
Shore Rd
Burberry Limited
East St
Lindsley Pl
Fallon Dr
Nells Island
Shore Rd
Housatonic River
Supplements Unlimited
Eunice Pkwy
Harborview Pl
Main St
Elm St
Birdseye St
Dynasty Restaurant
Pitt St
Beacon Point Rd
Elm St

For more information visit:

www.epa.gov/superfund/raymark

www.townofstratford.com/raymark

Raymark Facebok page:

Questions?